

QUARTERLY REPORT

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"Capable and Sensible Men..."

"Men are men before they are lawyers or physicians or manufacturers; and if you make them capable and sensible men, they will make themselves capable and sensible lawyers or physicians."

In this sentence John Stuart Mill defined the principle that has dominated liberal education. Mill wrote in a simpler day, when technology was in its infancy, when the borders of all knowledge were narrower, when the demand for specialized training was less compelling. To the scientist or technician today, whose career demands the most rigorous specialization, a liberal education in the broadest sense has seemed almost out of reach. Yet today more than ever before the scientist and engineer find themselves in positions involving great social responsibility. More than ever before they need a wisdom and perspective beyond the reach of their technology.

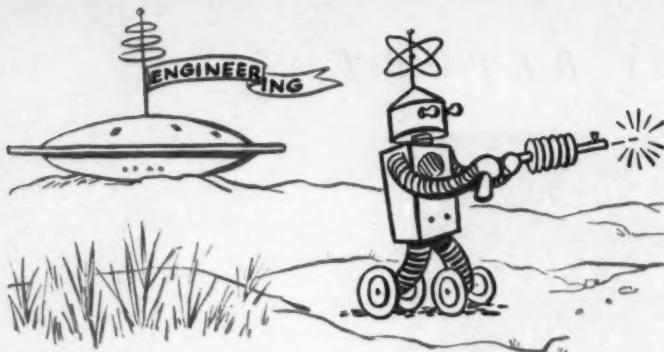
How can a meaningful introduction to the humanities and social sciences be given to the heavily-

burdened technical student? The American Society for Engineering Education (ASEE) has been deeply concerned with this question. Some ten years ago it sponsored what became a landmark in studies of technical education, the Hammond report, which stressed the importance of the liberal arts for engineers. Just this month it published another important

study, which is in effect a sequel to the Hammond report. Conducted by a committee under the chairmanship of Edwin S. Burdell of the Cooper Union, this, like the Hammond study, was supported by Carnegie Corporation. George A. Gullette of North Carolina State College's department of social studies directed the project.

The latest report takes a look at how the humanities and social sciences are faring in our technical schools. It is based on many talks with engineering and liberal arts educators, and visits to some 60 engineering schools. As might be expected, members of the committee





find enormous variety in both the amount and the quality of liberal education being offered.

They find many valuable examples of imaginative experimentation. They also find, however, that in school after school what pose as the liberal arts offerings turn out to be a few courses in elementary English and a year of business economics. Very few of the engineering schools allow the 20% of time for the humanities and social sciences that the Hammond report considered essential; on the other hand, others provide up to 25%. Some schools, while supposedly maintaining certain requirements in the liberal arts, allow ROTC classwork and business courses for liberal arts credit. One extreme example of such distortion of definition is in the school which charges a course in mechanical engineering taken by an electrical engineer to the liberal arts requirement!

Cooperation between the Faculties

One major section of the report deals with the relationships between those traditional arch-foes, the engineering and liberal arts faculties. They are often separated physically as well as spiritually, and the seemingly interminable war between them is still waged with energy on a number of campuses. Where this is true, the programs and the students suffer.

On the other hand, in that growing number of institutions in which there is close cooperation and mutual respect between the faculties, the good spirit is manifested both in better programs and in more student interest in the nontechnical courses.

One source of the split between the faculties is an issue that has been fought over for years: whether the liberal arts departments should develop special courses for engineers. Most engineers want special courses; most arts people do not. "Any request for courses other than those developed by the arts departments for arts men is a request for adulteration and is to be

resisted to the death," a liberal arts department head told a member of the ASEE committee. "If the engineers want culture they can come and take what the arts college offers."

The engineers retort that there is good reason for their plea for special treatment precisely because most of the courses are designed by arts men for arts men. For instance, a course titled "An Introduction to English Literature" is exactly that, they point out; it is an introduction to the subject for a man who is going on to years of study in the same field. Most engineers are seeking to learn, in a year of literature or philosophy or psychology, simply what the intelligent layman ought to know about the subject. A course suitable for them, they claim, could and should be different from that designed for people with a primary interest in that field.

The ASEE committee acknowledges justice on both sides of this controversy. The courses in "Engineering English," "Engineering Economics," "Engineering Psychology," etc., that sprang up about 15 or 20 years ago did, in many cases, represent attempts to "water down the subject and soften up the grading" for the sake of engineers.

The committee vigorously opposes any effort to devise courses that do not meet the highest academic standards. It believes, however, that there is a place for courses for engineers that are equally rigorous but possibly different in content and presentation from those developed for liberal arts majors.

In the relatively few hours set aside for the liberal arts, which of the many possible subjects should be included? The committee believes that two basic principles should govern the selection.

Maintaining a Balance

One is that business training must not be confused with the humanistic and social studies. There is undoubtedly a place in the technical schools for courses in accounting, business administration, business law, etc., but they cannot be considered part of the liberal arts. They serve very different educational purposes.

The second principle is that a roughly equal balance should be maintained between work in the humanities and work in the social sciences. The engineering schools tend to weight their programs in favor of the social sciences; the committee believes that a conscious attempt should be made to provide

equal experience in both areas of the liberal arts.

But even when there is general agreement that students should have, for instance, history, philosophy, literature, and economics, other questions loom. What history? American, European, World? Ancient or modern? Cultural or political? What literature, and taught with what emphasis?

The teaching of world history has always presented staggering problems in terms of the mass of material to be covered. Several institutions have been experimenting with a method, inelegantly called the "block and gap" or "posthole" approach, in which several crucial periods in history are studied intensively. For instance, one may start with Athens in the Golden Age, jump to Europe in the 13th century, then to 16th century England, 18th century France, and end up with 20th century America.

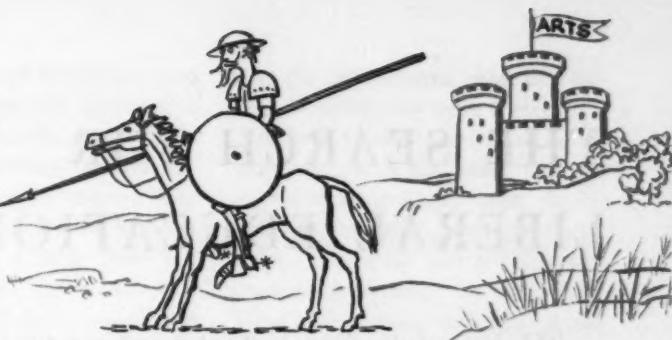
In the humanities, certain predispositions on the part of many engineers might be utilized to their benefit. Literature courses that emphasize ideas and values, as opposed to those that emphasize form (such as poetry) or historical significance, appeal more to engineers. Moreover, engineers seem to have an exceptional interest in and understanding of music, and the visual arts, such as painting, appeal to them more than literature. Music and art are both intrinsic parts of the humanities, and there is no reason why the engineers' feeling for them should not be exploited.

Courses in Sequence

The question of how courses are to be arranged is as crucial as what their content should be. The ASEE committee strongly reaffirms one of the recommendations of the Hammond report: that there should be a designed sequence of courses extending through the four undergraduate years. In this way, the humanities and social studies become an integral part of every engineer's total experience—not just a few requirements to get out of the way in the first year or two.

The committee believes that cooperation between the engineering and liberal arts faculties is absolutely essential to the formulation of sound programs. The objectives of these programs must not be defined too narrowly and superficially or, at the other extreme, too grandiosely.

On the picayune side is the belief that the humanities should teach "manners" to the traditionally



uncouth engineer, covering him with a light veneer of "cultivation" and providing him with conversational gambits for use in polite society. On the other hand, the committee reports that "the objectives which some schools profess to accomplish in courses involving 21 to 24 semester hours would appear to rival, or even to outstrip, what might be expected from a full four-year liberal arts program."

More common is the tendency to justify the humanistic and social studies on narrow utilitarian grounds. Some schools have sought—frequently at the urging of the liberal arts departments themselves—to promote such studies on the argument that they contribute to professional competence. Certainly it is true that the engineer, like any other professional, can operate more efficiently if he writes well, speaks effectively, understands something of human psychology, and knows economic principles. The committee agrees that the humanities and social sciences are, "in a deeply serious sense, practical and useful." But it objects to an "essentially frivolous definition of practicality that limits its attention to the development of a few surface skills."

Such a definition does serious injustice both to the engineer and to the humanities and social sciences. The report emphasizes that engineers, in common with other scientists and technicians, have responsible roles to play in society. They have risen to positions of authority in industry and government. Their responsibilities call for breadth and depth of knowledge and understanding, and a deep awareness of the ultimate problems, values, and goals of human existence. As responsible professional members of society—but even above this, as men—they are entitled to share in all that our colleges can give them of such understanding and awareness.

Copies of full report, *General Education in Engineering*, available from W. Leighton Collins (ASEE), Univ. of Illinois, Urbana; 25¢ each, less for quantity orders.

THE SEARCH FOR LIBERAL EDUCATION

This issue of the *Quarterly Report* describes a few of the many projects in liberal education that Carnegie Corporation has supported.

The concern for a sound and vital liberal or general education is widespread throughout our colleges and universities today. Faculties are engaged in lively and useful arguments over the meaning of liberal education, the differences (if any) between liberal and general education, the relation of the liberal arts to specialized training, and many similar questions. In such a time of reappraisal and debate, the experience of one institution may prove useful to others. The Corporation has sought to encourage such interchange of experience through the program of internships described on the last page of this report and the brief accounts of other interesting experiments published here.



Adventure in Urban Education

IN dozens of American cities, hundreds of thousands of students are pursuing higher education in environments remote in character, if not distance, from the sequestered college campuses of tradition. Temple University, in the heart of Philadelphia, exemplifies the problems of a number of our great urban universities in relating liberal education to demands for early specialization.

Of Temple's 4500 undergraduates, more than 80% commute to classes from their homes in or around Philadelphia. About two out of five list one or both parents as foreign-born. The

proportion of Temple students who work in business or industry while attending school is one of the highest in any institution of higher learning.

The character of Temple's student body serves to heighten a tendency common to many universities: to develop curricula designed chiefly to promote vocational competence or specialized knowledge. Economic and social pressures cause many students to concentrate heavily upon courses which teach skills needed for particular kinds of work.

Two of Temple's three undergraduate schools, the teachers college and

that of business and public administration, are by definition committed to vocational objectives. In addition, a high proportion of the students in the college of liberal arts and sciences are taking preprofessional training, for medicine, dentistry, etc. They too are permitted a very high degree of specialization in line with their vocational interests.

While recognizing their responsibility to provide the sort of professional and occupational training which the majority of their students demand, the faculty and administration of Temple believe that the university's function must be more broadly conceived. It includes "the adequate training of students for vocational competence and the education of men and women as human beings, as citizens, and as leaders. All the evidence suggests that in a modern, complex society these objectives, including vocational competence, require a broad, general education." This conviction prompted Temple's recent request to Carnegie Corporation for support of a program to strengthen liberal education in the university.

Under the Carnegie grant, the university assigned committees of faculty members, drawn from the humanities and fine arts, natural sciences, and social sciences, to draw up a plan of general education suited to Temple's special needs. Committee members have gone to ten other universities to see how they handle their general education programs, and representatives of Harvard and Columbia Universities and the University of Pittsburgh have visited Temple. Tentative recommendations for curriculum changes have already been presented to the faculties of Temple's three schools, and are now being discussed in faculty sessions.

An important feature of the study is that it may have implications not only for Temple but for other universities which are dedicated to serving the needs of an urban community.

Accent on Ideas

"Most textbooks are hardly worth reading; if not barren of ideas, they are impoverished in that respect." Words to this effect have escaped the lips of many students but few educators. Yet it was a distinguished president of a distinguished university—Henry Wriston of Brown—who wrote that sentence three years ago in announcing a new curriculum at Brown.

The experiment is a new adventure in education for Brown students. It changes the teaching emphasis in the



first two years from the traditional lecture-recitation method to one of independent study, group discussion, and critical writing, reading, and thinking. Textbooks are abandoned; lectures rare. The burden of learning rests, where it ultimately must under any system, on the student.

"The greatest mistake that has ever been made in American education at all levels, from kindergarten to Ph.D., is underestimating the capacity of the student," Mr. Wriston had said. Because there is a strong tendency to use the first college year mainly for remedial work, the interest of freshmen is blunted rather than sharpened. This is particularly true of the brighter students, who come to college expecting a new and challenging intellectual experience and then often suffer through rehashes of high school courses.

Barnaby Keeney, Mr. Wriston's successor as president of Brown University, is enthusiastic about the program. As dean, he played a key role in launching the new venture, and as president he continues to follow it critically and sympathetically.

The new series of courses is called "The Identification and Criticism of Ideas" (IC). In each class, study is centered upon several classic books chosen from the humanities, social sciences, or natural sciences. Not that the students are restricted to reading these few books! It had been hoped that these would stimulate the students to greater outside reading, and the hopes have been amply justified. Just a year after the new curriculum was adopted library circulation among freshmen and sophomores had increased by at least 20 per cent.

The new program is optional (the standard curriculum is still offered also), and open only to freshmen and sophomores. Twenty-four courses labeled "IC" are offered. "History IC," instead of being the conventional survey of world history from prehistoric times to the H-bomb, is devoted to the growth of the modern state, and is based on reading of Burke, Paine, and Mill. An "IC" course in political economy is concentrated on study of Adam Smith's *Wealth of Nations*. One of the "Classics IC" courses is devoted to the treatment of man's destiny in Virgil's *Aeneid*.



The Brown administration finds that many more students choose the new curriculum than might have been predicted. And, from the student point of view, the courses seem to be a solid success. Most of the freshmen perform better than they had been expected to do. In the past, Brown, like other colleges, had a rather high percentage of students who ended their first year in the bottom quarter of their class when their academic aptitude indicated that they should have ranked near the top. This percentage has been markedly reduced—proving the Brown thesis

that the able student must be challenged immediately upon entrance.

More and more freshmen and sophomores approach the deans with inquiries about graduate work. At the dining tables and on other social occasions, more of the talk is about academic matters than at any earlier time. The main complaint about the courses, in fact, has come from the upperclassmen, who are disappointed because they have not been permitted to take them.



The faculty reaction, too, has been interesting. Despite the heavy burdens such courses place on teachers—"it is much harder to conduct a lively discussion than a lively lecture," as Mr. Wriston said—most of those participating in the new courses are excited by them. Many of the teachers, even those who have been graduate instructors, say they had never realized the capacity of their underclassmen, and have found that they can require a great deal more of them than they had ever believed possible.

Brown's experiment in general education, which was based on a five-year grant of \$250,000 from Carnegie Corporation, is now in its third year. The faculty and administration continue to evaluate and revise some of the offerings. But whatever the final form of the "IC" curriculum, and whatever effects it may have on American education as a whole, it has certainly had a marked effect on the character of undergraduate teaching at Brown.



PERSONS & PLACES

The Purpose of the Church

This month, Harper and Brothers published H. Richard Niebuhr's *The Purpose of the Church and Its Ministry*, a survey and analysis of the aims of theological education in a democracy. In the minds of many educators—and of many ministers—the specific purpose of the ministry and its functions are ill defined. Yet, as Mr. Niebuhr points out, hundreds of schools in the United States and Canada make it their business to educate men and women for the Christian ministry. "Doing splendid, indifferent, or woefully inadequate work, these ministers and the schools that train them are subject to praise and blame by themselves, the churches, and the enveloping society."

Recently, more than a hundred Protestant theological schools agreed to examine themselves and the status of theological education in general, and it is the result of their self-questioning that Mr. Niebuhr has formulated in his book. He discusses the purpose of the church; the emerging new conception of the ministry; and the vitality, character and purpose of a theological school as classroom and as community.

Two other books based on the theological study, which was conducted under a grant from Carnegie Corporation, will be published within the next year.

New Book on The Balkans

The Balkans in Our Time, by Robert Lee Wolff, is another new book reporting research conducted with Corporation funds. It is one in a series of books produced by members of the Russian Research Center at Harvard University, and was recently published by the Harvard University Press.

Mr. Wolff reviews the politics, economics, social, and cultural life of four Balkan nations—Rumania, Bulgaria, Yugoslavia, and Albania. For centuries these countries have figured large on the world scene because of their strategic location between East and West. Long coveted by Russia, Imperial as well as Soviet, all these nations fell under Russian sway in the postwar years. Three of them remain satellites, while the fourth, Yugoslavia, has divorced itself from the Soviet sphere while remaining Communist.

Although he treats the early history and later development of each of the Balkan nations, Mr. Wolff devotes particular detail to the way in which the Communist regimes were established. Mr. Wolff gives two chapters to post-war events in Yugoslavia and the rise of Titoism. He analyzes the background of the split between the onetime satellite and the Soviet Union, and describes the internal politics, foreign relations, and economy of Yugoslavia since its break with the Cominform.

Staff News

Jeanne L. Brand joined the Corporation staff last month in the newly created position of research assistant. A native of New York City, Miss Brand received the A.B. from St. Lawrence University, the M.A. from the University of Rochester, and the Ph.D. in social history from the University of London. She also was a fellow in history at Radcliffe College, and was a Fulbright and Leverhulme scholar in England.

Miss Brand came to the Corporation from the National Foundation for Infantile Paralysis. She served earlier with the United States Mission to the United Nations, and was in the WAVES during World War II.

Eugene I. Burdock, who had been an executive assistant since 1953, resigned last month to accept a position as associate research scientist in biometrics research, a new program initiated by the Department of Mental Hygiene of New York State to assist in evaluating therapeutic procedures for mental patients.

CARNEGIE CORPORATION OF NEW YORK

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Carnegie Corporation of New York is a philanthropic foundation created by Andrew Carnegie in 1911 for the advancement and diffusion of knowledge and understanding. It has a basic endowment of \$135 million and its present assets, reckoned at cost value, are approximately \$178 million. The income from \$12 million of this fund may be used in certain British Commonwealth areas; all other income must be spent in the United States.

The Corporation has a continuing interest in improving higher education. Grants are made to colleges and universities, professional associations, and other educational organizations for specific programs. Such programs include basic research as well as more effective use of the results of research, increased understanding of international affairs, better preparation of teachers, and new teaching programs.

Detailed descriptions of the Corporation's activities are contained in its annual reports, which usually are published in December.

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NEW GRANTS

Grants amounting to \$414,300 were announced by Carnegie Corporation trustees during the last quarter. These grants were made from income for the fiscal year 1955-56, now estimated at \$8,577,000. From this sum, \$2,271,000 has been set aside to meet commitments, including those for teachers' pensions, incurred in previous years. It is the Corporation's policy to spend all income in the year in which it is received.

Included among the grants voted during the last quarter are those listed below:

United States

Columbia University, for support of an American Assembly on representation of the United States abroad, \$85,000. About 50 leaders of business, labor, government, and education will gather at Arden House in Harriman, New York, from May 3-6, to discuss problems of U.S. representation overseas in the economic, informational and cultural, and military fields; participation in international organizations; and coordination of overseas representation. Carnegie Corporation supported the last American Assembly, which was on problems of state government.

George Peabody College for Teachers, for fellowships and strengthening the liberal arts curriculum, \$150,000. Two-thirds of the grant will be used to continue for five more years a fellowship program, undertaken with Carnegie funds, to encourage liberal arts graduates to go on to high school teaching careers. Twenty fellowships a year are awarded to graduates of Southern liberal arts colleges who plan their life work as teachers or school administrators. In addition to the money for fellowships, the present grant includes funds for general strengthening of the liberal arts at Peabody.

Oberlin College, for experimental courses in mathematics for freshmen, \$9,300. Faculty members plan to present the general freshman mathematics topics in terms of significant problems drawn from the social and natural sciences.

Social Science Research Council, for studies and conferences on national security policies, 1939-1955, \$75,000. The appropriation will be used to further the work of the SSRC's committee on civil-military relations, which has been supported by an earlier Carnegie grant.

Saint Francis Xavier College for Women, for the improvement of instruc-

tion in the natural sciences, \$45,000. The grant will be used to retrain scientific specialists in the philosophy of science so that they may teach a new introductory course, a philosophic introduction to the study of science, developed by the Saint Francis Xavier faculty.

Western Reserve University, for research and experimentation on education for librarianship, \$50,000. The director of Western Reserve's school of library science will undertake a thorough examination of education for librarians and, on the basis of this research, develop a model curriculum at Western Reserve.

THE CORPORATION TRUSTEES

Charles Allen Thomas



Charles Allen Thomas, president of the Monsanto Chemical Company in St. Louis, has been a trustee of Carnegie Corporation since 1951.

One of the country's principal atomic scientists, Mr. Thomas was awarded the Medal of Merit by President Truman in 1946. In 1943 he became a member of the Manhattan Project, and was in charge of the Clinton Laboratories at Oak Ridge, Tennessee, from 1945 to 1948. He served as deputy chief of the National Defense Research

Committee in 1942-43. He is a co-author of the "Acheson-Lilienthal Report," which outlined a master plan for the international control of atomic energy.

Born in Kentucky, Mr. Thomas received the A.B. from Transylvania College. He then went on for the M.S. from the Massachusetts Institute of Technology. In addition to his earned degrees he has received honorary degrees from several colleges and universities.

Mr. Thomas became president of Monsanto Chemical in 1951. He was the 1955 winner of the highest honor in American chemistry, the Priestley Medal, given by the American Chemical Society, of which he is a former president. A fellow of the American Association for the Advancement of Science, Mr. Thomas holds many U.S. patents. He is intensely interested in the early identification and encouragement of creative individuals and in ways of fostering their talent, primarily in the sciences but also in other fields.

INTERNS IN EDUCATION



INTERNSHIPS of a new kind have been established at five of the nation's most distinguished universities. The interns serving there wear no uniforms, but if they did they would be gowns of academic black rather than medical white. For they are "interns in general education."

"General education" is a phrase that gained popularity toward the end of the last war. Its supporters share the conviction that there is a certain core of understanding in the humanities, social sciences, and natural sciences that is of central importance to the education of every student. Instead of expecting underclassmen to take a sampling of elementary courses in a number of subjects, the colleges providing general education try to combine and relate important elements from various fields into basic courses required of all students or a series of specially designed courses from which the student may choose. These courses vary immensely, but all have the common purpose of providing fundamental training in the broad areas of human knowledge.

Certain of our institutions have been pioneers in developing imaginative and vigorous programs of general education. So that other schools could share the benefit of their experiences, six years ago Carnegie Corporation initiated a program under which young instructors from schools throughout the country could spend a year on the campuses of Chicago, Columbia, Harvard, and Yale. Recently, Brown University was added to the roster.

Three interns visit each of the host schools for a full academic year. They do not merely observe, but actually participate, in the educational programs. A young humanities teacher from Wheaton College, for example, became a "Visiting Fellow in General Education" at Harvard for a year. Although he was allowed plenty of time for study, discussion, and observation, he also taught a section of a humanities course, "Crisis and the Individual." As he later wrote: "I found actually participating in the teaching of a course far more rewarding and instructive than mere observing could possibly have been." Having seen at first hand the problems and rewards of that kind of teaching, he felt he could go on to observe more intelligently and fruitfully.

Active Participation

And observe he did. He watched other humanities courses in action, participated in staff meetings, and attended general education discussions at which he learned about the aims of similar courses in the social and physical sciences as well. Toward the end of his year at Harvard, he joined with all the other interns at a three-day meeting at Arden House, Columbia University's off-campus conference center. There he shared his experiences with other interns and heard representatives of the five host schools explain how their programs differed from each other.

The young man from Wheaton found that his experience at Arden House gave emphasis to the fact that "general education is not, and should not be, a religion with one creed. It has no boundaries. It can be carried on in as many different ways as there are institutions, courses, or instructors."

The interns often come forward with suggestions for the schools they are

visiting. And as Dean Lawrence H. Chamberlain of Columbia College points out, all the host schools have had to re-examine their own general education practices in trying to explain, rationalize, and justify them to their visitors. In addition, at the annual Arden House conferences the staffs of the various programs are bombarded by questions from their opposite numbers at other schools as well as from the interns.

This self-examination on the part of the schools is noticed with approval by the interns too. One of them at Chicago wrote: "As good as the courses and the program are, there is scarcely anyone in the College who thinks that they are as good as they should be. . . . The instructors are not in a state of lethargic agreement about content and method. There is a steady and thorough re-examination of the courses."

Another wrote: "An intern soon learns, if he never knew it before, that a general education program is not something a faculty decides to have in July, writes about in September, and puts into effect in October. . . . It is an academic program with organic unity, a unity that can come only after years of experience, thought, trial and error."

Five years of experience with the internship program is being used by Dean Chamberlain in a review he is making of the philosophy and practices of general education. Carnegie Corporation made a grant for this study as a means of assessing the impact of general education on undergraduate instruction.



